



RESIDENTIAL BUILDING PERMIT DRAINAGE REVIEW

On undeveloped land, most rainwater soaks into the ground and flows slowly to nearby lakes and streams through the soil. When land is cleared or covered with impervious surface, the rainwater flows quickly across the site and can result in flooding and erosion which could cause a public safety hazard, property damage and harm environmental resources. Although single-family homes are typically small sites, the cumulative effect of uncontrolled rainwater from these sites can be significant to downstream property and water bodies. For this reason, any residential development in the City of Renton that creates at least 2,000 square feet but less than 5,000 sf of new impervious surface area is required to go through Residential Building Permit Drainage Review (Small Project Drainage Review). This process will assure that the applicant complies with the flow control and erosion and sediment control requirements as adopted by the City (RMC 4-6-030).

Appendix C of the *2009 King County Surface Water Design Manual* (KCSWDM) explains the submittal requirement for Residential Building Permit Drainage Review, the methods available for single-family flow control, and the erosion and sediment control measures. A copy of Appendix C may be found on the City's website (www.rentonwa.gov) on the Surface Water Design Standards page.

Flow control Best Management Practices (BMPs) are required to be constructed with residential building permits. Infiltration and dispersion for the roof area are the preferred methods of flow control, unless soil type or topography precludes its use. If infiltration or dispersion are not feasible or applicable, other methods include:

- Limited infiltration (see section C.2.3)
- Basic dispersion (see section C.2.4)
- Rain garden (see section C.2.5)
- Permeable pavement (see section C.2.6)
- Rainwater harvesting (see section C.2.7)
- Vegetated roof (see section C.2.8)
- Reduced impervious surface credit (see section C.2.9)
- Native growth retention credit (see section C.2.10)

Each method has associated restrictions that may make it inappropriate for certain sites. The applicant is advised to read each method carefully to determine which is most suitable for the site. A combination of methods may be used.

In most cases, the homeowner or contractor may prepare the plans. If the Project contains or is adjacent to a flood, erosion, steep slope hazard area, landslide hazard area or landslide hazard drainage area; the City will require a geotechnical report and plans signed by an engineer or civil engineer licensed in the State of Washington.

To achieve the objective of single-family flow control, a Declaration of Covenant (per section C.5.2) for each flow control BMP (best management practice) identifying maintenance responsibility and granting the City access to inspect the Flow Control BMP shall be reviewed by the City prior to building permit issuance and recorded with King County prior to final building inspection. The Declaration of Covenant shall be signed (by the property owner or agent) and notarized. There are two versions of the declaration of covenant applicable to Residential Developments and can be found in the City's website (www.rentonwa.gov) on the Surface Water Design Standards page (one applicable for all flow control BMPs and one applicable for only the Impervious Surface Limit). Choose the document that is appropriate for your selected flow control BMP. The completed form shall be reviewed and approved by the City prior to recording.

Erosion and sediment control (ESC) is required for all projects resulting in land disturbing activity. Homeowners and contractors are responsible for implementation and maintenance of erosion control to prevent sediment from leaving the construction site. Erosion and sediment control (ESC) must be used both during and after construction as specified in section C.1.2.4 of the Surface Water Design Manual. All of the following ESC requirements must be evaluated for applicability to the proposed project:

- Mark Clearing Limits/Minimize Clearing
- Minimize Sediment Tracked Offsite
- Control Sediment
- Stabilize Exposed Soils
- Control Runoff
- Control Dewatering
- Control Other Pollutants
- Final Stabilization

The placement and type of proposed ESC measures are to be shown on the ESC plan for the proposed project. The contractor or other persons performing construction activities shall comply with the stormwater pollution prevention measures/BMPs specified for such activities in the King County *Stormwater Pollution Prevention Manual*.

Please see the Residential Building Permit Drainage Review Checklist for drainage review submittal requirements.



RESIDENTIAL BUILDING PERMIT DRAINAGE REVIEW CHECKLIST

PURPOSE: To establish drainage review requirements associated with residential development or redevelopment projects in accordance with City of Renton's adopted standards (RMC 4-6-030), consistent with the City's goal to protect public health, safety, welfare and aesthetics, and providing adequate public services/infrastructure.

THRESHOLD: Residential Building Permit Drainage Review is required for any residential development in the City of Renton that create at least 2,000 square feet but less than 5,000 sf of new impervious surface, replaced impervious surface, or new plus replaced impervious surface, OR 7,000 square feet or more of land disturbing activity but less than 35,000 sf of new pervious surface. All City permitted projects that will involve land disturbing activity must provide Erosion and Sediment Control measures.

REQUIREMENTS: All residential developments that trigger residential building permit drainage review shall comply with the drainage requirements contained in Appendix C of the 2009 King County Surface Water Design Manual. **EROSION AND SEDIMENT CONTROL IS REQUIRED FOR ALL PROJECTS RESULTING IN LAND DISTURBING ACTIVITY.**

COMPLETE APPLICATION REQUIRED: In order to accept your Combination or Building Permit application, each of the items included in the Residential Building Permit Drainage Review Checklist must be submitted at the same time. All plans and attachments must be on 8½"x11" paper.

APPLICATION SUBMITTAL HOURS: Applications should be submitted to Development Services staff at the 6th floor counter of Renton City Hall, 1055 South Grady Way, between 8:00 A.M. and 4:00 P.M. Monday through Friday.

ADDITIONAL PERMITS AND REVIEW: Additional permits and/or drainage review may be required as part of this proposal. It is the applicant's responsibility to obtain these other approvals. Information regarding these other requirements may be found at the City's webpage (rentonwa.gov) under the Surface Water Standards page.



1055 South Grady Way-Renton, WA 98057
Phone: 425-430-7200 Fax: 425-430-7231

RESIDENTIAL BUILDING PERMIT DRAINAGE REVIEW CHECKLIST

Name:
Phone:

Address:
Tax Parcel #:

Prepared by:
Address:
Phone:

Total site area
Existing impervious surface (sf):
Existing pervious surface (sf):

Proposed impervious surface (sf):
Proposed pervious surface (sf):
Land disturbing activity (sf):

Plat and Lot # (if applicable):

REQUIREMENTS

ALL OF THE FOLLOWING ARE REQUIRED AS PART OF A DRAINAGE PLAN SUBMITTAL:

- o **Drainage Plan -Site Plan (2 copies)** per section Appendix C, section C.4 of the 2009 King County Surface Water Design Manual. Must be plotted to scale, with all significant dimensions given. Site plans, should be drawn on 8½" x 11".
 - o **Flow Control Best Management Practice (BMP) Site Plan.** If a flow control BMP is required, the applicant must provide the site plans (to be used as a Flow Control BMP Site Plan) on 8½"x11" paper with 1-inch margins so they can be directly recorded as attachments to the required declaration of covenant and grant of easement per Requirement 3 of Section C.1.3.3. See attached Exhibit A – Flow Control BMP Site Plan.
- o **Flow Control BMP Design and Maintenance Details (2 copies)** per section C.4.3.
- o **Small Site Erosion and Sediment Control (ESC) Plan (2 copies)** per section C.4.2.2. Erosion and sediment control is required for all projects resulting in land disturbing activity. Must be plotted to scale on 8½" x 11" paper, with all significant dimensions given.
- o **Written Drainage Assessment (2 copies)** per section C.4.4 of the 2009 King County Surface Water Design Manual.
- o **Declaration of covenant (2 copies)** per section C.5.2 of the 2009 King County Surface Water Design Manual
- o **Copy of any recorded covenant- 2 copies** (flow control BMP and/or impervious surface limit covenant).

DRAINAGE PLAN

ALL OF THE FOLLOWING INFORMATION MUST BE INCLUDED ON ALL RESIDENTIAL DRAINAGE PLANS:

o IDENTIFICATION

- o Parcel number
- o Dimension of all property lines
- o Street names and property address
- o Section, township and range of proposal
- o North arrow
- o Legend if needed
- o Scale—use a scale that clearly illustrates BMPs/measures
- o Topography

o BUILDING AND SITE DEVELOPMENT FEATURES

- o Footprint of all structures (existing and proposed)
- o Show delineation and dimensions of impervious surfaces (parking, roads, roof, driveways, etc) and pervious surfaces (patios), both existing and proposed.
- o Location of any retaining walls and rockeries (existing and proposed)
- o Existing or proposed septic system, including all system components and both primary and reserve drainfields.
 - o Utility structures (poles, fire hydrants, etc.)
 - o Existing and proposed easements
 - o Remaining vegetated open space that will remain

o CRITICAL AREAS

For a map detailing the critical areas on your site, visit the Self Help Area in Development Services. *Developments within 200 feet of a critical area may require an engineered drainage plan.*

- o Location of all existing and proposed ditches, swales, pipes, etc.
- o Delineation of all streams, wetlands, lakes, closed depressions, or other water features (including any required buffer widths)
- o Delineation of all flood hazard areas, erosion hazard areas, landslide hazard areas, and their buffers and building setback lines.
- o Delineation of all drainage easements, tracts and right-of-way

o INFORMATION SPECIFIC TO FLOW CONTROL BMPs (SECTION C.4.2.2 OF THE SWDM)

- o Show location and dimensions of flow control BMP methods such as: infiltration trenches, drywells, rain gardens, permeable pavements for managing stormwater from all impervious surfaces.
- o Show delineation and dimensions of the flowpath segment, if applicable.
- o Show setback lengths between flow control BMPs and any property line, structure, steep slope, stream, wetland, or septic system.

FLOW CONTROL BMP DESIGN AND MAINTENANCE DETAILS (REQUIRED WHENEVER FLOW CONTROL BMPs ARE PROPOSED BY A PROJECT)

The following information is required on the flow control BMPs design and maintenance details:

- Provide diagrams/figures (should be displayed on 8½" x 11" paper with 1-inch margins so they can be directly recorded as attachments to the required declaration of covenant and grant of easement), design specifications, and maintenance instructions for each flow control BMP proposed.
- Provide maintenance instructions explaining for future property owners the purpose of each flow control BMP and how it must be maintained and operated.

SMALL SITE EROSION AND SEDIMENT CONTROL (ESC) PLAN (SECTION C.1.2.4 OF THE SURFACE WATER DESIGN MANUAL). Erosion and sediment control is required for all projects resulting in land disturbing activity.

The following information is required on small site ESC plans:

- Delineation of proposed clearing limits (i.e., area to be disturbed)
- Type and location of ESC measures such as: construction entrance, mulching, nets and blankets plastic covering, clearing Limits/Minimize Clearing, silt fence, vegetated strip, triangular silt dike, storm drain inlet protection.
- Notes indicating the location of any significant offsite drainage features within 200 feet of the discharge point(s) for the *site/lot*, including streams, lakes, and roadside ditches.

WRITTEN DRAINAGE ASSESSMENT (SECTION C.4.4 OF THE 2009 KING COUNTY SURFACE WATER DESIGN MANUAL)

The written drainage assessment is a supporting document of the drainage plan and typically includes the following information:

- A narrative description of proposed project.
 - Property description
 - Existing and proposed improvements.
- A description of proposed flow control BMPs shown on the drainage plan and how they were selected. Please include details on the impervious surface draining to each BMP, and how each BMP was sized (by table or % coverage).
- A description of proposed ESC measures shown on the plans and how they were selected
- A description of any necessary special studies or soils reports
- A description of any other information required by Development Services.

DECLARATION OF COVENANANT (SECTION C.5.2 OF THE 2009 KING COUNTY SURFACE WATER DESIGN MANUAL)

- o A signed and notarized Declaration of Covenant (per reference section 8-M of the 2009 King County Surface Water Design Manual as amended by the City) for recording is required for all projects requiring a drainage plan.
- o The complete form must be reviewed and approved by Development Services prior to recording.

I hereby certify the information provided above and on the attached plans is true and accurate to the best of my knowledge and represents the planned development of the parcel.

X

Signature of Owner/ Owner's Agent

Date:

EXHIBIT A - FLOW CONTROL BMP SITE PLAN

TOTAL LOT/SITE AREA: _____
ADDRESS _____
PARCEL NUMBER: _____
PERMIT #: _____

EXISTING PERVIOUS AREA: _____
PROPOSED PERVIOUS AREA: _____
EXISTING IMPERVIOUS AREA: _____
PROPOSED IMPERVIOUS AREA: _____



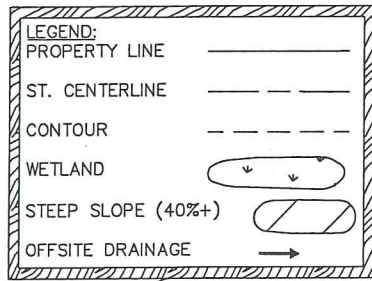
APPROVED BY: _____

SCALE: _____

TITLE: _____

DATE _____

DRAWN BY: MARK SUJKA



APPLICANT: Malene McResident
600 NE Z Street
Sometown, WA. 98111
(206) 555-1212

PROJECT PARCEL NO.= 322708
PROJECT ADDRESS= 7519 NE Q Street
(proposed) Sometown, WA. 98111
SECTION/TOWNSHIP/RANGE: 32-27-08

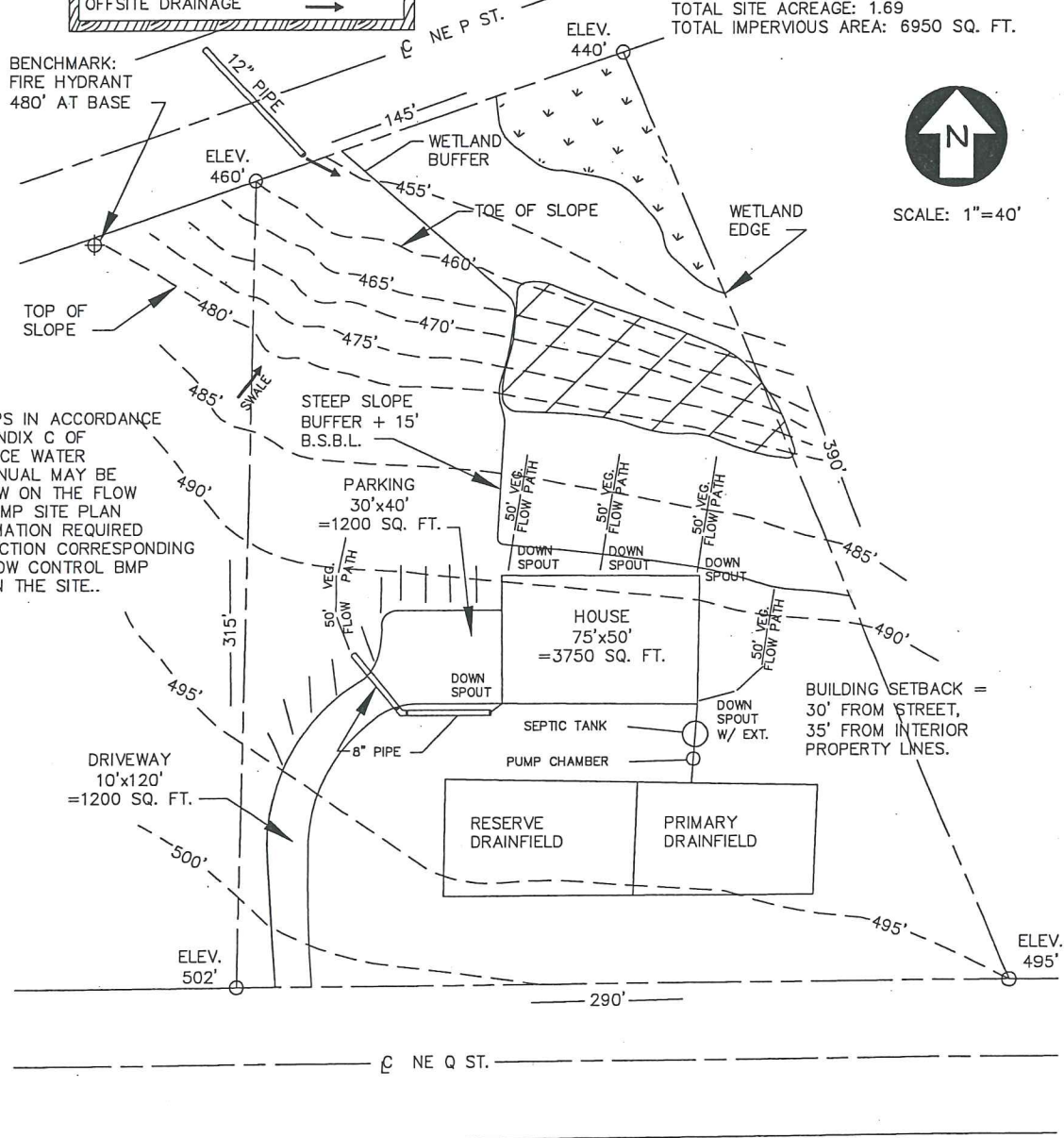
TOTAL SITE ACREAGE: 1.69
TOTAL IMPERVIOUS AREA: 6950 SQ. FT.



SCALE: 1"=40'

NOTE

OTHER BMPs IN ACCORDANCE WITH APPENDIX C OF THE SURFACE WATER DESIGN MANUAL MAY BE USED. SHOW ON THE FLOW CONTROL BMP SITE PLAN ALL INFORMATION REQUIRED ON THE SECTION CORRESPONDING TO THE FLOW CONTROL BMP APPLIED ON THE SITE..



PUBLIC WORKS
DEPARTMENT

**SAMPLE
FLOW CONTROL BMP SITE PLAN**

STD. PLAN - 218.00

MARCH 2008

RESIDENTIAL BUILDING PERMIT DRAINAGE ASSESSMENT - EXAMPLE

**Malene McResident
7519 NE Q Street
Permit # B05R7184**

PROJECT NARRATIVE:

The project is located east of Duvall on a 1.69-acre lot that is zoned RA. The lot is mostly forested with a wetland on the northeast corner of the property. The lot slopes down from Q Street on the south to P Street on the north. The slope on the south portion of the property is 6-14%. The house and its septic drainfields are proposed on the southern portion of the lot. The driveway will be approximately 10 feet by 120 feet (1,200 square feet) of impervious surface, the parking area 1,200 square feet, and the house 3,750 square feet. The total proposed impervious surface is 6,150 square feet. The total proposed clearing for the house, yard, drainfield areas, and driveway is 0.84 acres, which complies with the maximum of 50% allowed. The wetland is a Category III wetland with a minimum required buffer width of 60 feet as determined in the preapplication meeting with RDSD. By definition, the wetland is also flood hazard area for which a floodplain and base flood elevation must be determined. Subject to RDSD review and approval, an approximate base flood elevation of 452 has been estimated based on a downstream overflow elevation of 450 (see attached notes from the project's land surveyor). This elevation is well below the proposed house and driveway location. The portion of the lot that is on a 40-50% slope is a steep slope hazard area as determined in the preapplication meeting with RDSD. A 50-foot buffer and a 15-foot building setback is required, as shown on the flow control BMP plan.

RDSD determined that dispersing of the roof runoff toward the steep slope was acceptable, as shown on the plan.

Because the lot is larger than 22,000 square feet, it is subject to the Large Lot BMP Requirements in Appendix C of the Surface Water Design Manual. As mandated by these requirements, all proposed impervious surface (6,150 square feet) is targeted for application of flow control BMPs. As for new pervious surface (totaling 30,440 square feet), it is less than 35,000 square feet; therefore, no flow control BMPs are required for this surface.

FLOW CONTROL BMP DESCRIPTION:

To address the requirements for mitigation of target impervious surface, the applicability and feasibility of full dispersion was considered first. After subtracting out the wetland and the 50% portion of the lot that may be cleared per code requirements, about 34,000 square feet of the lot will remain as unsubmerged native vegetated surface. This means

that full dispersion could be applicable to up to 5,100 square feet of the target impervious surface (15% of 34,000). However, because of the lot's topography and the location of proposed clearing, there is no way to achieve the minimum required 100 feet of native vegetated flowpath segment that has a slope of 15% or flatter. Therefore, full dispersion is not feasible. Full infiltration of roof runoff was considered next. According to the attached soils report for the septic system design, the soil on the project site is a sandy loam with dense glacial till. Therefore, full infiltration is not applicable. This allowed for selection of basic dispersion as the flow control BMP of choice for application to the target impervious surfaces of this project. To implement basic dispersion, the roof downspouts if the proposed house will discharge via splash blocks to minimum 50-foot vegetated flowpath segments located on slopes no steeper than 15% as shown on the flow control BMP site plan. No more than 700 square feet of roof area will discharge to any one splash block and vegetated flowpath segment. All of the flowpaths will be downslope of septic tank and drainfields. The northern portion of the driveway will be discharged via sheet flow over a 10-foot vegetated flowpath segment to the north, as shown on the site plan. Runoff from approximately 700 square feet of the southern portion of the driveway will be collected by a rock-lined ditch and a concrete driveway berm and discharged to a 12-foot-long dispersion trench with notch board and then over a 25-foot vegetated flowpath segment toward the north. The 30-foot wide parking area will be discharged via sheet flow over a 2-foot-wide crushed rock strip and a vegetated flowpath segment of 15 feet as shown on the FCBMP site plan.

EROSION AND SEDIMENT CONTROL MEASSURES:

In order to prevent erosion and trap sediments within the project site, the following BMPs will be used approximately as shown on the ESC plan:

- Clearing limits will be marked by fencing or other means on the ground.
- The driveway will be constructed and graveled immediately. A rocked construction entrance will be placed at the end of the driveway. Dispersion trenches will be placed according to flow control requirements. Cleared areas accepting sheet flow from the driveway and parking area will be seeded and mulched.
- Runoff will not be allowed to concentrate and no water will be allowed to point discharge onto the slopes. Silt fencing will be placed along slope contours at the downslope limit of clearing.
- Mulch will be spread over all cleared areas of the site when they are not being worked. Mulch will consist of air-dried straw and chipped site vegetation.



RECORDING REQUESTED BY AND
WHEN RECORDED MAIL TO:

CITY CLERK'S OFFICE
CITY OF RENTON
1055 SOUTH GRADY WAY
RENTON, WA 98057

DECLARATION OF COVENANT FOR MAINTENANCE AND INSPECTION OF FLOW CONTROL BMPS

Grantor: _____

Grantee: City of Renton

Legal Description: _____

Additional Legal(s) on: _____

Assessor's Tax Parcel ID#: _____

IN CONSIDERATION of the approved City of Renton(check one of the following) ☐ residential building permit, ☐ commercial building permit, ☐ clearing and grading permit, ☐ subdivision permit, or ☐ short subdivision permit for Application File No. LUA/SWP _____ relating to the real property ("Property") described above, the Grantor(s), the owner(s) in fee of that Property, hereby

covenants(covenant) with City or Renton, a political subdivision of the state of Washington, that he/she(they) will observe, consent to, and abide by the conditions and obligations set forth and described in Paragraphs 1 through 8 below with regard to the Property. Grantor(s) hereby grants(grant), covenants(covenant), and agrees(agree) as follows:

1. Grantor(s) or his/her(their) successors in interest and assigns ("Owners") shall retain, uphold, and protect the stormwater management devices, features, pathways, limits, and restrictions, known as flow control best management practices ("BMPs"), shown on the approved Flow Control BMP Site Plan for the Property attached hereto and incorporated herein as Exhibit A.

2. The Owners shall at their own cost, operate, maintain, and keep in good repair, the Property's BMPs as described in the approved Design and Maintenance Details for each BMP attached hereto and incorporated herein as Exhibit B.

3. City or Renton shall provide at least 30 days written notice to the Owners that entry on the Property is planned for the inspection of the BMPs. After the 30 days, the Owners shall allow the City of Renton to enter for the sole purpose of inspecting the BMPs. In lieu of inspection by the City, the Owners may elect to engage a licensed civil engineer registered in the state of Washington who has expertise in drainage to inspect the BMPs and provide a written report describing their condition. If the engineer option is chosen, the Owners shall provide written notice to the City of Renton within fifteen days of receiving the City's notice of inspection. Within 30 days of giving this notice, the Owners, or the engineer on behalf of the Owners, shall provide the engineer's report to the City of Renton. If the report is not provided in a timely manner as specified above, the City of Renton may inspect the BMPs without further notice.

4. If the City determines from its inspection, or from an engineer's report provided in accordance with Paragraph 3, that maintenance, repair, restoration, and/or mitigation work is required for the BMPs, The City shall notify the Owners of the specific maintenance, repair, restoration, and/or mitigation work (Work) required under RMC 4-6-030. The City shall also set a reasonable deadline for completing the Work or providing an engineer's report that verifies completion of the Work. After the deadline has

passed, the Owners shall allow the City access to re-inspect the BMPs unless an engineer's report has been provided verifying completion of the Work. If the work is not completed properly within the time frame set by the City, the City may initiate an enforcement action. Failure to properly maintain the BMPs is a violation of RMC 4-6-030 and may subject the Owners to enforcement under the RMC 1-3, including fines and penalties.

5. Apart from performing routine landscape maintenance, the Owners are hereby required to obtain written approval from the City or Renton before performing any alterations or modifications to the BMPs.

6. Any notice or approval required to be given by one party to the other under the provisions of this Declaration of Covenant shall be effective upon personal delivery to the other party, or after three (3) days from the date that the notice or approval is mailed with delivery confirmation to the current address on record with each Party. The parties shall notify each other of any change to their addresses.

7. This Declaration of Covenant is intended to promote the efficient and effective management of surface water drainage on the Property, and it shall inure to the benefit of all the citizens of the City of Renton and its successors and assigns. This Declaration of Covenant shall run with the land and be binding upon Grantor(s), and Grantor's(s') successors in interest and assigns.

8. This Declaration of Covenant may be terminated by execution of a written agreement by the Owners and the City of Renton that is recorded by King County in its real property records.

IN WITNESS WHEREOF, this Declaration of Covenant for the Maintenance and Inspection of
Flow Control BMPs is executed this ____ day of _____, 20____.

GRANTOR, owner of the Property

GRANTOR, owner of the Property

STATE OF WASHINGTON)
COUNTY OF KING)ss.

On this day personally appeared before me:

_____, to me known to be the individual(s) described in
and who executed the within and foregoing instrument and acknowledged that they signed the same as
their free and voluntary act and deed, for the uses and purposes therein stated.

Given under my hand and official seal this ____ day of _____, 20____.

Printed name
Notary Public in and for the State of Washington,
residing at

My appointment expires _____